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AN
INAUGURAL DISSERTATION,
UPON
THE ACTION OF COLD,
UPON THE HUMAN BODY,
AND ITS
APPLICATION TO THE CURE OF DISEASES;
SUBMITTED TO THE EXAMINATION
OF THE
REV. JOHN ANDREWS, D. D. PROVOST,
PRO TEMPORE,
THE TRUSTEES AND MEDICAL FACULTY,
OF THE
UNIVERSITY OF PENNSYLVANIA,
ON THE TENTH OF APRIL, 1807;
FOR THE DEGREE OF
DOCTOR OF MEDICINE.

BY ROBERT MILLER,
OF VIRGINIA, HONORARY MEMBER OF THE PHILADELPHIA
MEDICAL SOCIETY.

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1807.

TO
JOSEPH TRENT, M. D.

OF
RICHMOND, VIRGINIA.

THIS dissertation is inscribed as a small
testimony of respect for his talents, esteem for
his virtues, and gratitude for the favors he has
conferred upon his obliged and affectionate friend,
and former pupil,

THE AUTHOR.

TO
BENJAMIN RUSH, M. D.

PROFESSOR OF THE INSTITUTES, AND PRACTICE OF MEDICINE,
AND CLINICAL PRACTICE IN THE UNIVERSITY
OF PENNSYLVANIA.

DEAR SIR,

TO you more than to any other, I feel myself indebted for the information (little or much) which I possess in the practical part of the science of medicine. This consideration alone would give you a claim to my veneration and esteem: but, I am under other obligations to you. To your skill, by a new application, of old and common remedies, I owe my recovery from a violent and dangerous disease. Your tender attentions upon that occasion will ever be held by me in grateful remembrance. In contemplating these and the many other marks of kindness with which you have honored me; I feel more than I am able to express. I can only add my best wishes for the long continuance of your life, and that thousands may directly and indirectly owe as much to your principles, and practice in medicine, as

DEAR SIR,

YOUR AFFECTIONATE,

AND DEVOTED FRIEND,

THE AUTHOR.

TO
JOHN MILLER, ESQ.

OF
LIVERPOOL, ~~MANCHESTER~~,

MY DEAR UNCLE,

FROM you I have received tokens of the most disinterested friendship and regard. Of all men living, you are most deserving of my affection. I want words to express the gratitude which your kindness has excited in my breast. Most cheerfully I embrace this opportunity of acknowledging my obligations to you, and of assuring you of my sincere and ardent attachment.

That the evening of your life may be spent in tranquility and happiness, is the earnest wish of

DEAR SIR,

YOUR OBLIGED AND SINCERELY
AFFECTIONATE NEPHEW,

ROBERT MILLER.



ACTION OF COLD,

UPON THE HUMAN BODY, &c.

THE subject I have selected for my Dissertation is an important one. I feel my inability to treat it in the manner it merits: but knowing I address myself to men of liberal minds who are disposed to view rather with an eye of indulgence than criticism the first essay of inexperienced youth, I am emboldened by this consideration to prosecute the subject.

Previously to my saying any thing of Cold, as a remedy for diseases, I deem it important, to enquire into its *modus operandi*.

Without a correct theory of its mode of operating, our remedy, instead of being the instrument of health and life may prove the cause of death to our patients. False theories have done incalculable mischief in medicine. Witness the direful effects of Opium under the erroneous opinion that its operation was sedative. On the subject in question namely the *modus operandi* of Cold, I find a diversity of sentiment. It is maintained by several eminent physicians that Cold, is a stimulant. But this I think will never be assented to by those who build their opinion on the foundation of experiment. At the head of the supporters of the stimulating operation of our remedy stands, Doctor Currie of Liverpool, a physician of high respectability, and who undoubtedly has written

more learnedly, and plausibly in its defence, than any author I have seen. But this is not the first instance in which error has had an able advocate. I shall attempt to shew in the following pages that cold is a directly debilitating power. My reasons for embracing this opinion I shall state in as concise a manner as possible. I deduce this inference.

1st. From the paleness it produces on the surface of the body. Some have supposed that a spasmodic constriction of the capillaries took place, and have thus accounted for the resistance to the force of the heart. But, to use the words of the ingenious Author of *Zoonomia*, "there is no necessity to introduce this imaginary spasm since those who are conversant in injecting bodies, find it necessary first to put them into warm water to take away the stiffness of the cold dead vessels, which become inflexible like other muscles of dead animals and prevent the injected fluid from passing." I infer that cold is a sedative.

2dly, From its diminishing the energy of the heart and arteries. This is proven by a multiplicity of experiments which have been made on the pulse when the body was under the influence of cold. It is further proven by the feebleness and slowness of the pulse, of the inhabitants of very cold climates. The pulse of a Greenlander beats upon an average, only forty strokes in a minute.

3dly, From the great torpor and immobility of the nervous and muscular systems of those who inhabit very cold countries. They are characterised by imbecility of body and mind. They are phlegmatic, insipid, unimpassioned, and in short their constitutions are cold as the climate they live in.

4thly, From the gradual diminution and final extinction of the powers of life, produced by the continued action of cold.

Those who perish from cold, we are told are affected in the following manner.

“ After having their feet first seized till they grow past feeling it, the rest of their bodies is so invaded that they are taken with a drowsiness that gives them an extreme propensity to sleep, which if indulged, they awake no more but die insensibly.”

5thly, from the great susceptibility which it creates to the stimulus of heat. Hence the glow which almost every person has experienced on coming out of the cold bath. Hence Catarrhs, Pleurisies and the train of diseases which depend on the sensible qualities of the atmosphere. Cold by accumulating excitability predisposes to those diseases, but it does no more. It is the stimulus of heat succeeding too suddenly an exposure to Cold, that does all the mischief. This is proven by the fact that a person who has been exposed to cold though ever so intense, will experience no disease provided he is careful to restore the heat of his body *gradually*. Those who maintain that cold stimulates, have often ascribed to cold what was the effect of heat.

6th, *And lastly*, I infer that cold is a sedative from the strong analogy which it bears in its effects to fear, to Venesection and the like powers which are known to be directly debilitating. This analogy will be frequently hinted at in the subsequent pages of this essay. It will be particularly obvious when we come to apply our remedy to the cure of diseases. I shall endeavour to shew that it is of especial use in cases of high morbid excitement where Bloodletting is indicated; in short I view cold as an auxiliary to the *Lançet*.

To the opinion which I have advocated, many objections have been made. I should exceed the limits I have prescribed to this Essay were I to attempt a formal and compleat refutation of all the arguments which have been so industriously brought together, by those who maintain the stimulant action of cold. It will suffice I hope, if I only take notice of a few of the most prominent, leaving to an abler pen the task of a more elaborate history and refutation of them. They are as follow :

1st, If cold be applied to the skin it produces paleness, and causes what is called the cutis anserina. " This, (says an advocate for the stimulating operation of cold) cannot be owing to a mere passive shrinking up of the parts, as if they had been dead matter, but to the blood and other fluids being forced out of them by the strong contraction of the skin and superficial vessels." I confess, this is the first time I ever heard that a stimulus applied to the skin occasioned the blood to retire from the part, producing paleness, coldness, and a quiescence of the capillary vessels. I can only say that if such is its operation, it is a stimulus sui generis. I would ask the gentleman, if cantharides, if mustard, if alcohol, or any stimulant in nature applied to the skin, produce the phenomena or any thing like them, which cold is found to do? Nay is not their action the very reverse of this? Do they not increase the action of the cutaneous vessels and cause redness, heat and pain in the part? But further, the cutis anserina can, I think, be explained without supposing any such vital contraction of the skin and cutaneous vessels as some talk of. The common smooth state of the skin, is a forced state (just as water is the forced state of ice) caused and kept so by a

certain degree of heat, which being abstracted, the skin, by its elasticity returns to its natural contracted state; and hence in my opinion, the phenomenon of cutis anserina.

2dly, It has been infered that cold stimulates from the circumstance of persons, having been restored from a state of syncope, by dashing cold water upon them; carried away by the idea that the stimulus of cold produced the recovery, they omitted to enquire whether there might not have been another and a more efficient agent in the business; a far more rational and satisfactory explanation of the fact has been given by Dr. Rush. He supposes that the water *dashed* (as it always is in such cases) upon the naked, and very excitable body, acts by its weight and impetus as a mechanical stimulus. It might with great propriety be asked, would not the sprinkling of tepid water rouse a patient from syncope as soon as the same quantity taken from the coldest spring? I believe it would. But future experiment must decide.

3dly, The following fact is thought by one of the advocates for the stimulating action of cold, to afford an incontrovertible argument in favor of his opinion. I shall relate it in the author's own words. "When certain animals, says he, are lying in a state of hybernation with the power of life paralyzed and its functions suspended, if they be taken from their dormitories and suddenly plunged into cold water or any other way exposed to a high degree of cold, they will be momentarily roused from their torpor and will exhibit unequivocal symptoms of uneasiness."

This fact, with due deference to the ingenious author, I view in a different light from that in which he has represented it.

It will not be denied that the torpor of hybernating animals is occasioned by the winter's cold. This being the case, is it a rational supposition that cold would resuscitate them? It remains for them to shew that actual cold has such an effect, for I contend that in putting those animals in water we apply warmth to them and not cold as he supposes. When we take an animal torpid and almost lifeless from his hybernaculum and put him into spring or river water we actually remove him from something like a cold to a warm climate. If I wished to restore an animal under the above circumstances, water would be the very stimulus I should use, and for the same reason that I would apply cold water to a frozen limb. The temperature of water would be a stimulus just in unison with the accumulated excitability.

If I have succeeded in placing this subject in a true point of view, the authors favorite fact must fail of giving that substantial support to his opinion which he boasts of.

4thly, The thin discharge which takes place from the nostrils of some people in cold weather has been alledged as another argument of the stimulating operation of cold; but Dr. Darwin has given a much more just and satisfactory explanation of this fact. He says, "it is owing to the torpid state of the absorbent vessels of membrana Schneideriana; which are benumbed sooner than those which perform the secretion of mucus."

6thly, If a glass of cold water be taken when the heat of the body is above what is natural a profused perspiration will be the consequence. This has been attributed to the stimulus of cold: but I think the fact may be more rationally explained. In such cases I would say that the system was above the sweating point, and that

the draught of cold water acted by reducing it to this point. Do we not see bloodletting in cases of high morbid action, unlock the capillary vessels and cause perspiration when all the hot stimulating drinks, that could be poured down the patient for the purpose, had failed to have the effect ?

7thly, It is a familiar fact that a draught of cold water to a person exposed to the oppressive rays of a sultry sun, imparts strength and refreshment. But how does it act in this case ? Surely not by virtue of a directly stimulating operation, as some have too hastily concluded, but by abstracting the stimulus of heat which had caused depression, just in the same way that bloodletting is known to restore the strength when prostrated by a powerful impression.

8thly, Cold water dashed forcibly over the abdomen, pubes and lower extremities, has often times when other remedies have failed, excited the alimentary canal to a discharge of its contents. How, asks an ingenious writer, with great exultation, can we reconcile such an effect with the opinion of those who contend for the sedative operation of cold ? ' I will answer his interrogatory by another. Has he never seen bloodletting have the same effect ? More than a dozen times, I believe, in my preceptor's (Dr. Trent's) practice, I have seen patients taken with a disposition to evacuate their bowels, while the blood was flowing from their arms after the most drastic cathartics had failed to have this effect. We should recollect that a constipation, of the bowels, like a suppression of perspiration is a very frequent concomitant of fever. We should moreover remember that heat has a constant tendency to produce inactivity in the alimentary canal. The inhabitants of hot climates are invariably costive, and require cathartics

twice or thrice as strong as those do who live in northern latitudes. No wonder then that cold is so often found to remove this state of the bowels.

9thly, " Suppose, (says an advocate for the stimulating operation of cold) two persons to be asleep in the same room; into the bosom of one you thrust a snow ball, and on that of the other you pour boiling water, they will both be roused from their sleep, with equal suddenness. But surely, he adds, a sedative is not calculated to break asunder the bonds of sleep."

I must beg leave to differ from the ingenious author on this point....I maintain that such *is* sometimes the operation of a sedative, and my opinion, is supported by two facts related by Dr. Rush in his excellent lectures, which may be truly called a treasury of useful facts, the first is the case of a woman who could not sleep without a lighted candle in her room. The other is the case of a watchmaker: this man had been in the habit of sleeping with a parcel of watches under his head, and happening once to be from home all night, was kept awake, by the want of the stimulus of sound, of the watches. The abstraction of the stimulus of light in the former, and of sound in the latter case produced wakefulness, yet who will contend that darkness, or silence are stimulants. In the same manner, may we not say ice acted in the case above mentioned? The abstraction of the accustomed stimulus of heat, brought the system below the sleeping point. Comparable with, and even indispensable to sound, and natural sleep, is, I apprehend, a certain degree of heat, which, if suddenly, and considerably diminished, wakefulness necessarily ensues.

Upon an attentive consideration of the arguments alledged in support of cold being a stimulant, I think it will be found, that they are more formidable in appearance, than in reality. The plastic power of the pen of ingenuity, has given an air of importance to the opinion, to which it certainly is not entitled.

With this I finish what I have to say relative to the *modus operandi* of cold. I have to regret that the season of the year, the short time allowed for preparing a dissertation, and my weak state of health, precluded the possibility of my making such experiments as were necessary to do greater justice to this part of my subject.

I now proceed to speak of the application of cold to the cure of diseases, which part of my subject I shall enter on with extreme diffidence because my experience has been very limited.

Cold is an ancient remedy. It was employed by Hippocrates and Galen, but like many good old remedies it went out of fashion for a great many years. It has not however escaped the enlightened physicians of the present day, by whom it has been rescued from undeserved neglect.

Those who have been most instrumental in reviving this valuable remedy, had to combat much opposition from popular ignorance and popular prejudice. But over these, science and truth are gaining a rapid ascendancy.

For establishing and greatly extending the application of cold to the cure of diseases, the world is indebted more perhaps to the labours of the learned Dr. Currie of Liverpool, than to any other person. Scarcely I think, can any thing be added to what that able writer has given us on the use of cold in Typhus fever, small pox and a few other diseases.

But other authors furnish us with abundant proof that the same remedy is applicable to many diseases which he has not mentioned.

The theory of the operation of cold which I have attempted to support would lead us to expect most advantage from it in cases of violent and inordinate action. Let us enquire how far this suggestion of reason is sanctioned and supported by the observation and experience of practitioners. I shall begin with,

YELLOW FEVER.

THIS Disease, once so formidable and so fatal, has in a great measure yielded to the irresistible energy of modern practice. The Lancet, Mercury, and cold water, have been the weapons most successfully used to disarm this disease of its terrors.

But it is last only of these powerful remedies that I am here to speak of.

Doctor Rush informs us, that in the fever of 1793, Cold water was found a most agreeable and powerful remedy. "I directed it says he, to be applied by means of napkins to the head and to be injected into the bowels by means of glyster. It gave the same ease to both when in pain which Opium gives to pain from other causes." Doctor Wright of Jamaica likewise employed our remedy with great benefit in yellow fever. He makes a remark which strengthens and corroborates the Theory we have been contending for. "In the *beginning* of the fever, he says, the cold bath succeeded admirably,

but in the advanced stage much caution was necessary." I could add to this the testimony of Mosely, Jackson and other writers, but it were superfluous. In my opinion, the respectable authority of Dr. Rush, if it stood alone, would be sufficient to establish the utility of the remedy.

It being abundantly ascertained that cold is of essential use in the treatment of Yellow Fever, I am naturally led to infer, that it would be serviceable in the Plague, for between these two diseases Doctor Rush has pointed out the most striking analogy.

This inference, I find confirmed by many facts recorded in books. Morandi, physician at Venice, observes, "that some sailors at Constantinople in the phrensy of the plague, have thrown themselves into the sea, and it is said that on being taken out they have recovered." "Savary in his letters on Egypt, relates the case of a sea captain who being ill with the plague stripped himself quite naked and laid all night on the deck, the copious dew that fell pierced him, (as he expresses it) to the very bones. In a few hours, says he, it rendered my respiration free and my head more composed; the agitation of my blood was calmed, and after bathing myself in sea water I recovered."

Mr. Volney says, that the water carriers at Aleppo always escape the plague.

What I have said relative to the use of cold in Yellow Fever, will supercede the necessity of treating particularly of it's application to the inflammatory bilious and the mild bilious fever of Dr. Rush, as these last arise from the same cause, and differ from it only in being a lower grade of morbid excitement. It will only be necessary to vary the mode of applying the remedy. In the highly inflammatory bilious fevers, the best mode

of using Cold, is in the form of immersion. ‘, It was by suffering the body to lie for some time in a bed of cold water that the inhabitants of the Island of Massuah cured their violent bilious fevers.” Dr. Rush very properly observes, that, when applied in this way, “ it differs as much in its effects upon the body from the cold Bath, as rest in a cold room differs from exercise in the cold and open air.”*

Perpays in the less violent forms of Autumnal fever it will be sufficient, nay most eligible to make use of cold water in the way of ablution

IN INTERMITTENT FEVER.

COLD has been employed with great advantage by Dr. Currie of Liverpool. He judiciously cautions us against using it in the cold fit, but says, that when the hot stage was completely formed he has frequently used the cold affusion and always with the immediate solution of the paroxysm.

IN TYPHUS FEVER.

I Might quote from Dr. Curries excellent work, a variety of cases illustrative of the utility of cold in this disease : but he has treated the subject so fully and ably, that I think it were better to refer the reader to his book. which ought to be read by every practitioner. It may not however, be amiss to mention here an important rule-

* Dr. Rush's Enquiries, p. 282, vol. 3.

laid down by our author for regulating the exhibition of the Cold Bath in Typhus. He says, (and what he says is substantiated by a number of impressive cases) that it should only be used "when there is no sense of chilliness present, when the heat of the body is steadily above what is natural, and when there is no general or profuse perspiration." This in my opinion is a grand, governing rule, which should be kept in view, not only in the application of cold to Typhus, but to all other fevers.

IN DYSENTERY.

OF the use of cold in this disease I have had some experience in my own person. I had a very severe attack of it in the early part of our last Autumn. It was attended with great pain, tenesmus, and a pulse beating 110 strokes in a minute. For the relief of those symptoms I determined to try the effects of a liberal use of Ice-water internally. The remedy was suggested by the following reasoning: Dysentery is a fever thrown upon the bowels or in other words an inflammation of the bowels. Cold has been found greatly to lessen inflammation in other parts and why not in this part? Under the influence of this theory I did not fear to drink plentifully of Ice-water, and every thing I eat was made cold by Ice. The result corresponded to my expectation. In the course of a few hours my pulse fell from 110 down to 96 in the minute, and the pain in my bowels was relieved as by a charm. From the success of this experiment, I am induced to entertain a high opinion of cold in dysentery.

In speaking to a friend, (a man of much experience) of the trial I had made of cold in dysentery and of its benign influence in alleviating the pain which attends that disease, it reminded him of the relief which he had himself, derived from the same remedy many years ago. He had a most violent dysentery, great pain and immoderate thirst were urgent symptoms. His physician did not bleed him, but gave him Laudanum with hot stimulating drinks to produce a sweat, and expressly prohibited his touching cold water. This treatment exacerbated every symptom of his disease, his thirst became intense. At this time, fortunately for the patient, the pail of water, by accident, was left in his room. Nature's impulse to drink was irresistible, he yielded to it, and drank at the first draught not less than a quart. Nothing, he says, could have been more grateful or refreshing. The tormina of his bowels subsided; and the perspiration, which his physician attempted in vain to force by hot drinks, was now elicited by a delightful draught of cold water. From this time he abandoned his Doctor's nauseating drugs, and adopting the remedy which nature called aloud for, and experience approved, he very soon recovered.

The salutary operation of cold water in dysentery would be more compleatly ensured perhaps by exhibiting it in the form of injection, as well as by the mouth.

IN PLEURISY AND CATARRH.

COLD air and cold drinks in these diseases have the sanction of respectable authorities. The judicious Doctor Sydenham earnestly recommends them; and Dr. Cullen, Dr. Darwin, Dr. Brown and Dr. Rush,

all agree in the utility of this practice. But a more decided proof of the safety and success of cold in these diseases, I shall extract from Dr. Currie's Reports, 2d Vol. In this we read that "frequent trials of it were made at Edinburgh, not one of the patients who had symptoms of Catarrh or inflammation of the lungs suffered the least inconvenience from the cold or terpid affusion ; none of their symptoms were aggravated or increased by it, but on the contrary, most of them were relieved." Nothing can, I think, be more conclusive than those experiments.

IN SMALL POX.

THE cold regimen was adopted, and successfully used in this disease by Dr. Sydenham and other physicians ; but Dr. Currie in his reports has shewn that the practice may be safely carried even much farther than was done by them. The good effects resulting from the free admission of cold air, suggested to this physician the trial of the cold bath. His expectations were not disappointed by experiment. He used it in many cases with advantage. He tells us, "that in situations where the eruptive fever of small pox is clearly distinguishable and where it does not abate sufficiently on the admission of cold air, the affusion of the cold water may be restored to with confidence and safety." The same writer furnishes us with testimony in favour of our remedy in Meazles. After what I have just said of its use in Small Pox, I cannot suppose it necessary to enter into a particular consideration of its application to Meazles. Erisipelas and all the other forms of Eruptive fever.

IN THE ANGINOSE STATE OF FEVER.

THE practice, so common of applying flannel and other stimulating applications to the throat in the different forms of Cynanche, I am persuaded is highly improper. It must be particularly injurious in that very inflammatory disease, the Cynanche Trachealis. It has been shewn that cold is not only safe but very salutary in Catarrh and Pleurisy; and can we hesitate to believe that it would prove equally beneficial in Cynanche Trachealis, a disease so nearly allied to them?

I believe that cloths dipped in cold water, and even ice itself, applied to the Trachea, would be found much more useful than the fashionable applications of heated flannel or even blisters.

The utility of our remedy in the Scarlatina Anginosa, has been ascertained by the most ample experience. The experiments which have been made by Dr. Gregory of Edinburgh, and Dr. Currie of Liverpool, leave nothing further to be done or wished on the subject. In no disease is the heat of the body so great as in this. The mercury is found to rise, according to Dr. Currie, from 105 to 110, and he has even known it to rise as high as 112, the greatest heat he ever observed in the human body. "It is on the first accession of this high temperature, he remarks, that it is necessary to act with vigour." He recommends four or five gallons of the coldest water to be poured over the patient's naked body and this process it is necessary to repeat every one or two hours. This judicious and energetic practice could not fail to have the most salutary effects. On the third or fourth day the patient was generally in a state

of convalescence. Ulceration of the throat and all the other alarming symptoms are prevented by it.

The Cynanche Maligna being, as I conceive, but another name for Scarlatina Anginosa, it will not be necessary to say any thing about it.

IN CYNANCHE TONSILLARIS.

It has happened, (says, Dr. Currie) in several instances that the cold, cool and tepid affusion, have been used in the early stages of this disease. Tho I should not have used it, he adds, by design, I never found any injury to result from it. On the contrary, it was uniformly followed by a mild disease."

To this I may add that I once mitigated very much the violence of this disease in my own person, by applying napkins dipped in cold water to my head, to which there was a great determination.

IN RHEUMATISM AND GOUT.

It will be unnecessary to search authors for testimony in favor of cold in acute Rheumatism. The practice is known and adopted by almost every physician of the present day but the propriety of our remedy is not so generally acknowledged in Gout, tho' it has been proven by Dr. Rush, that Gout (when seated in the ligaments) and Rheumatism are one and the same disease, that the former is as much an inflammatory disease as the latter, and that what cures the one is also a remedy for the other. The prejudice against cold applications in Gout, I apprehend, is to be traced to the unfortunate association of

flannel and other warm remedies with this disease. How ill grounded such a prejudice is, the following fact taken from Dr. Stock's collections is calculated to shew, "a Gouty patient having with difficulty walked with a stick for a hundred yards, kept his foot for ten minutes exposed to a stream of cold water, issuing with great force from a large cock. He found such immediate relief from it that he threw away his stick and walked to his house with ease." For many other interesting facts on this head I must refer the reader to the author just mentioned.

IN PHRÆNITIS AND MANIA.

It were needless to multiply authorities to establish the utility of our remedy in phrænitis. The practice of applying cold water and ice to the head in this disease is universal. The success that attends it is so well known that it would be superfluous to dwell upon it. I shall therefore pass on and consider,

MANIA.

OF this disease, physicians formerly knew nothing but the name: they were entirely in the dark concerning it. It was reserved for the genius of Dr. Rush to develop its real nature and to expunge it from the catalogue of incurable diseases. Formerly Mania was by some supposed to be seated in the nervous system; whilst others pronounced its seat to be in the mind and to be beyond

human ken ; but our professor has shewn that it has every characteristic of fever: its causes the same, its symptoms the same, and its remedies the same, and therefore he infers that it is seated in the blood-vessels. The truth of his theory is proven by the unparalled success of his practice.

Considering then the disease in question a true fever we should naturally expect that cold would have a salutary operation in it.

Of this remedy I can speak with some degree of confidence, since at the Lunatic Hospital in Williamsburg Virginia, I have witnessed the most decided advantage from it. It is the practice of the keeper, when ever any of the patients are turbulent or noisy, to have them taken to the Bath and immersed until they become calm. By this treatment, I have seen the most refractory tamed. The keeper informed me, that since he had adopted the above practice, he had had very little trouble with them and that he believed it would supercede the necessity of using the straight jacket.

In mania, our remedy has succeeded in the hands of Dr. Currie and others, from whom I might (if time would permit) cite cases to shew its importance. Upon the whole I am convinced that the Cold Bath is a most powerful and valuable remedy in this disease.

THE FEVER OF INTOXICATION.

THIS disease I place next to Mania because it seems to me to be very nearly allied to it. The same cause which produces the former not unfrequently pro-

duces the latter. Many of their symptoms too are so much alike, as to induce me to view intoxication as an acute, a temporary insanity.

When I consider how much the circulation is accelerated, and how far above what is natural, the heat of the body is increased in this disease, I cannot hesitate to believe, that cold would be a most valuable and effective remedy for it.

Dr. Currie says he has observed the heat of the body in the fever of intoxication to rise to 105, nearly the highest degree of heat in the typhus fever, and Dr. Alexander in his own case found it as high as 107. Now whenever the body is thus preternaturally heated, the capillaries are obstinately constricted, of course perspiration is suppressed, great thirst generally attends, and often head ach. If cold drinks and the affusion of cold water are safe and salutary in any state of the system it must be in this. But not only in the above stage of intoxication would cold be of use. Even when it has proceeded to depression or what Brown calls indirect debility, it may be beneficially employed, as will appear from the following curious fact, to be found in Currie's reports.

“ A gentleman in the island of Barbadoes, a great votary of Bacchus, was in the practice from fifteen to twenty years of plunging into cold water, when he arose from his bottle, and of actually going to sleep in a trough full of water with his head supported by a kind of wooden pillow, made for the purpose above the surface. Often he was so far gone that he was obliged to be carried to the bath by a servant. The effect of this practice was that he awaked cheerful and refreshed and free from all the effects of intoxication.”

I have met with another fact very much to my purpose in Dr. Rush's invaluable inquiry into the effects of ardent spirits ; " a number of gentlemen who had drunken to intoxication on board a ship in the stream near Fell's point at Baltimore, in consequence of their reeling in a small boat on their way to the shore, in the evening, upset it and fell into the water, several boats from the shore hurried to their relief. They were all picked up and went home perfectly sober to their families : "

But to cure a fit of intoxication it is not necessary to make use of general immersion ; it will be sufficient for this purpose to apply cold to the head only. It is said of the late celebrated Charles Fox, that when he got in his cups, he sobered himself by keeping a napkin wet with cold water to his head. After undergoing this refrigerating process, he was prepared to take his seat in the House of Commons.

Dr. Rush says, " he has seen persons who were found drunk in the streets of Philadelphia cured by being dragged to the pump and having the water pumped upon their heads for ten or fifteen minutes. The patient he says generally rose and awaked off sober and sullen after the use of this remedy. "

Cold is a safe and effectual remedy for the debility from action, if applied as soon as it is induced : But where its application has been delayed several hours, cold or any other debilitating power ought to be used with great caution. For we should bear in mind that when suddenly brought on indirect is very readily convertible into direct debility, or to use the language of Dr. Rush, the debility from action soon is changed into

the debility of abstraction. For example, a man shall be deprived of sense and motion by ardent spirits; in this state of torpor and insensibility he is put to bed; he sleeps six or eight hours and now awakes in even a morbidly excitable state: he is now alive to the feeblest impressions. During the quiescence of his system in sleep the excitability has accumulated.

In cases of prostration whether from ardent spirits, opium, lightening or any other stimulant, the debilitating plan of treatment I believe to be indicated, but at the same time I think the practice requires caution. I shall illustrate my position by a simile. A mariner, who found his ship about to sink from having too much ballast would act very unwisely were he at once to throw over board the whole of his ballast. The reaction of the water would certainly upset the vessel.

IN HÆMORRAGES.

Testimonies to prove the utility of cold in these diseases crowd upon me from every quarter.

In Epistaxis there is not perhaps to be found a more popular or a more successful remedy.

We have the most satisfactory testimony of its utility in Hemoptysis. Dr. Rush tells us in his Lectures, that Dr. Bond who was much afflicted with this disease once checked an alarming attack of it by undressing himself on a cold day and wrapping himself up in a sheet dipped in cold vinegar. But it is not necessary to use it after the manner of Dr. Bond in order to obtain the desired effect, for it is well known that the general action of cold may be extended over the system by its application to a part. Dr Currie says he has found that a hæmorrhage

from the lungs may be stopped by immersing the feet in cold water.

When the Catamenial evacuation is diminished or suppressed we often see the discharge increased or restored by the common practice of bathing the feet in warm water.

What would be the effect of putting the feet in very *cold* water when the evacuation is preternaturally great? I think it probable that this practice in many cases would prove salutary. It might at least be tried and when it fails, recourse might then be had to the practice recommended by some writers of introducing ice into the Vagina.

IN HÆMORRHOIDS.

A Gentleman who suffered the most distressing pain and inconvenience from this troublesome disease, asked me if I could suggest any thing that would afford him relief. I recommended to him to use repeated injections of ice-water, and in his daily visits to Cloacina, to make use of sponge and cold water in lieu of paper, after the manner of the Turks. He followed my advice, and I had the pleasure to be informed by him that he had derived more prompt and complete relief from it than from any remedy he had ever tried. I have no doubt in such cases it will be found to be the best anodyne in the *materia medica*.

I shall now bring to a conclusion this imperfect essay. I am aware that there are many diseases to which cold is applicable that I have wholly omitted to speak of: but had I extended the consideration of this part of my sub-

ject, I should have been led into a labarynth of research, quite incompatable with my weak state of health and the short time allotted to performances of this kind

It would moreover have swelled my dissertation to an undue size. The few diseases I *have* enumerated, I was compelled to treat in a very cursory manner, yet I will hope that the little I have said will have some weight in establishing, that cold is a sedative and that it is chiefly applicable to diseases of violent and inordinate action.

For the valuable instruction I have received from the several professors of this University, I beg leave to return my sincere thanks, accompanied by my earnest wishes for their individual prosperity and happiness.

FINIS.

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